

BRIEF

FEBRUARY 21, 2003



By John P. Dalton

With Laurie Orlov

Paul Sonderegger

Hwasun Lee

Headquarters

Forrester Research, Inc.

400 Technology Square

Cambridge, MA 02139

USA

+1 617/613-6000

Fax: +1 617/613-5000

www.forrester.com

Crossing The Document-Data Divide

Documents are the currency of business. But a hodgepodge of factional interests and inadequate systems thwart efforts to optimize document-intensive processes. A new breed of networked documents combine data, and processes.

There's no getting around it: Business runs on documents. And for most firms, most documents wind up in paper format. Despite the trillions of dollars spent on digitizing business processes, firms -- and their partners -- are drowning in paper, faxes, and printer output.¹ Why have IT investments made such a small dent in automating document-intensive processes?

- **Systems spit out bad copy.** For many firms, just getting complex enterprise applications -- like purchasing, invoicing, or contract management -- to generate forms and reports that mimic paper versions is a triumph. But low-resolution outputs with lobotomized thin-client functionality force users to hit the print command, fire up the fax, and get on the phone in order to complete an interaction.
- **Siloed purchasing reinforces local habits.** Balkanized app purchasing decisions further aggravate the piecemeal rate of automation among these systems. Rather than take a cross-departmental view of processes that could benefit from digitization, firms farm out technology purchasing decisions to business units that buy to support purely the needs of legal, finance, or purchasing. The result: Economies of scale get sacrificed for incremental gains.
- **Proprietary systems thwart integration efforts.** Even when firms recognize opportunities to extend automated solutions beyond workgroups, tapping proprietary legacy systems remains a costly and time-consuming exercise (see the December 2001 Forrester Report "Reducing Integration's Cost").²

Figure 1 Emerging Technologies Fuel Networked Documents

Problem	Solution	Value	Sample applications
Anemic presentation layer	X Internet technologies that push executable code and business logic closer to the end user	Interfaces look and behave like desktop applications; networked documents only make calls to the server when necessary, reducing bandwidth consumption	Mortgage application taps amortization data Claims processing links to insurance legacy apps
Documents isolated from relevant applications and processes	Addressable XML embedded within documents	Opens up "black box" documents so that relevant systems can correspond with and respond to element-level changes made in the document	Expense management links receipts to G/L Contract administration links contract to app
Proprietary systems prohibit cost-effective integration efforts	XML-based Internet middleware	Replaces costly proprietary adapters and skill sets with standards-based solutions	Purchase orders map back to transaction systems Invoices synchronize with ERP apps

Source: Forrester Research, Inc.

INTRODUCING THE NETWORKED DOCUMENT

Historically, documents -- including those created by applications -- have been viewed as display media. But a series of recent technological innovations will transform documents from a staid output format into dynamic interfaces for applications and processes (see Figure 1). Forrester calls these next-generation interfaces networked documents, which we define as:

Living documents with a bi-directional interface to enterprise processes.

Networked documents will:

- **Speed time to task completion.** Next-generation documents will feature embedded computational and business logic, minimizing the amount of extra-application support users need to complete their tasks. While filling out a loan application at banks like FleetBoston or Wells Fargo, users can compute monthly payments, manipulate rates, and save desired results within the document itself rather than switch to a calculator. And digital signatures will enable online acceptance of rates and terms.

- **Return control to users.** Though apps vendors rush to provide browser-based versions of their systems, the UI paradigm for emergent business documents will not be Internet Explorer or Navigator but standard desktop tools like Microsoft Word and Adobe Acrobat Reader. If a user begins filling out an application but needs information from an unavailable source, she can save changes locally and resume work later when additional information is known -- without losing data.
- **Eliminate manual steps.** Informed with business rules and data, networked documents will cut out costly manual steps required to complete common transactions. Case in point: ASC's contract management app generates PDFs with embedded bar codes. Once the recipient has signed the printed copy, she faxes the document directly to the application, eliminating the need for at least one tedious trip to the fax machine and manual rekeying of updated data.
- **Adapt to process changes.** Aware of updates made by relevant apps through XML-based middleware, networked documents function as bi-directional gateways to enterprise processes -- modifying output and input fields based on changes made throughout the process ecosystem. For example, rate changes that impact a client's loan application automatically trigger relevant updates to the prospective borrower's view of an amortization table.

NETWORKED DOCUMENTS WILL OVERHAUL COMMUNICATIONS

Networked documents will fuel deep changes in the way that companies manage and envision intra- and extra-enterprise communications.

- **The publishing paradigm will wither.** Firms spend heavily on homegrown and packaged content management systems to streamline document output. But as innovative companies begin to deploy networked documents, the publishing paradigm on which today's content management efforts are based will loosen its grip. The result? Documents will evolve into apps, and content managers will morph into process managers.
- **HTML -- the graveyard to be.** Once companies see their way out of the broadcast mindset that lies behind today's dead documents, they'll recoil from their static HTML-based forms. As demand for rich client-side functionality increases, firms will steadily begin replacing HTML interfaces with X Internet front ends that balance the need for enhanced end-user experience with cost-effective development and deployment.

- **Collaboration apps will blend into networked documents.** Responsive to changes made by end users and systems and loaded with relevant computational logic, networked documents will embody a growing portion of functionality that many today regard as the province of the collaboration vendors that focus on basic document sharing and workflow. For example, Adobe's Acrobat Reader and PDF format already give users the option to comment on drafts and apply Post-It notes before agreeing to a final draft.

¹ Office paper consumption has enjoyed double-digit growth since 1995, comprising 30% to 40% of the *total* paper consumption in the United States and United Kingdom. (Source: Sellen, Abigail J., and Harper, Richard R., "The Myth of the Paperless Office," pp. 8-12.)

² Global 3,500 firms spend on average \$6.3 million on integration efforts, yet only 35% of these projects come in on time.